ENVIROSAFE
ENVIROSAFE SERVICES OF OHIO, INC.

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July 22, 2014

Mr. Craig Butler, Director
Ohio Environmental Protection Agency
c/o Mr. Jeremy Carroll, RISS, DMWM
50 W. Town Street, Suite 700
Columbus, OH 43215

RE: Envirosafe Services of Ohio, Inc.
Ohio EPA ID No. 03-48-0092
USEPA ID No. OHD 045 243 706
Permit Modification Request **No. 090**:
Revision of TLL Compliance Date at SWMU 7

Dear Mr. Butler:

In accordance with OAC 3745-50-51(D)(1)(b), Envirosafe Services of Ohio, Inc. (ESOI) hereby submits a Class 1 permit modification notification requiring prior approval by the Director to the Ohio Environmental Protection Agency (Ohio EPA) for the Hazardous Waste Facility Installation and Operation Permit issued to its Oregon, Ohio waste management facility. ESOI is requesting a 1 year extension of the Target Leachate Level Compliance Date for Solid Waste Management Unit (SWMU) 7 in Module E of the Permit.

A detailed description is presented in Section 1 of the attached report from the Mannik & Smith Group. The report was submitted to Ohio EPA on July 2, 2014. Ohio EPA responded on July 9, 2014 requesting that ESOI submit a permit modification request within 45 days.

Posting Instructions for this Modification:

Replace existing Permit page 83 with the enclosed page 83 dated July 22, 2014 identified as Modification 090.

In accordance with OAC 3745-50-51(D)(1)(a)(ii), a notice of this modification will be sent to all persons on the facility mailing list and the appropriate units of State and local government (upon approval by Ohio EPA). A copy of the proposed notification has been included with this letter.

Certification for this submittal:

> I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate,

and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

If you have any questions, please contact Stephen DeLussa at (215) 659-2001, extension 15.

Sincerely,

Douglas E. Roberts,
President

Enclosures

Courtesy Copy:

Ms. Lynn Ackerson, Ohio EPA, DERR, NWDO w / attachments
Mr. Michael Terpinski, Ohio EPA, DERR, NWDO (electronic copy)
Ms. Robin Wiley, Ohio EPA, DMWM, On-Site Inspector (electronic copy)
Mr. Peter Ramanauskas, USEPA Region 5 (electronic copy)
Mr. Kris Mann, ESOI (electronic copy)
Mr. Stephen DeLussa, Envirosource Technologies, Inc. (electronic copy)

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ENVIROSAFE SERVICES OF OHIO, INC.

PROPOSED PUBLIC NOTICE

July 22, 2014

Notice is hereby given that the Ohio Environmental Protection Agency has approved a Class 1A permit modification notification request submitted to the Agency by Envirosafe Services of Ohio, Inc. (ESOI) for a modification to its existing Permit for its facility located at 876 Otter Creek Road, Oregon, Ohio, (USEPA ID No. OHD 045 243 706, Ohio EPA ID No. 03-48-0092). The purpose of the modification (090) is to revise the Target Leachate Level Compliance Date for Solid Waste management Unit 7 in Module E of the Permit. A copy of the permit modification request is available for review in the offices of the Ohio EPA, Northwest District Office at 347 North Dunbridge Road in Bowling Green, Ohio 43402. Please contact the Envirosafe facility at 419-698-3500 to review the application request or if you need additional information concerning this Permit modification. You may also contact the Ohio EPA, Northwest District Office at 419-352-8461.

EVALUATION AND RECOMMENDATIONS FOR SWMUS 6 & 7 LEACHATE EXTRACTION SYSTEMS

ENVIROSAFE SERVICES OF OHIO, INC.
OREGON, LUCAS COUNTY, OHIO
EPA IDENTIFICATION NUMBER: OHD 045 243 706; OHIO
PERMIT NUMBER: 03-48-0092

JUNE 27, 2014

PREPARED FOR:
ENVIROSAFE SERVICES OF OHIO, INC.
876 OTTER CREEK RD.
OREGON, OHIO 43616

PREPARED BY:
THE MANNIK & SMITH GROUP, INC.
1800 INDIAN WOOD CIRCLE
MAUMEE, OHIO 43537

EXECUTIVE SUMMARY

This report has been prepared by The Mannik & Smith Group (MSG) in response to a request by Envirosafe Services of Ohio, Inc. (ESOI) for evaluation of the presumptive corrective actions on Solid Waste Management Units (SWMUs) 6 and 7 at the 876 Otter Creek Road, Oregon, Ohio, facility and recommendations relative to the following issues:

- Compliance date for achievement of the SWMU 7 target leachate level (TLL),
- A plan for achievement of the TLL in certain SWMU 6 individual deep interior piezometers, and
- Disposition of certain SWMU 6 ineffective wells.

The report contains recommendations for a one-year extension of the SWMU 7 TLL, a plan for achievement of the TLL in three SWMU 6 wells, and delisting of wells RW-5, RW-6, and RW-7 from Tables 1 and 2 of the Operation, Maintenance, and Performance Monitoring Plan for the Presumptive Corrective Measures (OMPM Plan).

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1.0 SWMU 7 TARGET LEACHATE LEVEL – JUSTIFICATION FOR 1-YEAR EXTENSION

The leachate level in SWMU 7 has decreased by nearly 23 feet since the start-up of leachate extraction. Given the unknown reaction of extraction wells in a landfill that was not designed to collect and remove leachate, this has been a great accomplishment. The system was originally designed with basic assumptions based on little sub-grade knowledge. As the system began operating very useful information was obtained that changed what the design should be. The unit is not a landfill as landfills are constructed today. It is a series of sub-grade trenches with clay separation boundaries. As leachate levels fall below these boundaries, some wells become ineffective at removing leachate from other areas. This was addressed with the addition of more wells. Also, as leachate has been removed, waste consolidation and shifting has taken place resulting in the deformation or collapse of several wells. New wells have been installed where necessary to continue with leachate extraction. The new wells were designed to better address the accumulation of leachate, gas release, and measurement taking. However, no cost effective means has been found to address the effects of waste consolidation on the wells. New pumps and electrical systems have been installed to better address the type(s) of leachate being removed. An improved storm water management system is currently being installed to significantly reduce the chances of infiltration. A further unanticipated problem was the effects of the severe winter of 2013-2014. The system froze beyond anything encountered over the past 7 years of operation leaving portions of it inoperable for extended periods of time. This happened just as many of the wells were also collapsing due to waste consolidation from the dewatering activities. If it were not for these occurrences, MSG believes the system would already have achieved the TLL. Given these circumstances, MSG does not believe ESOI will achieve the July 1 compliance date for SWMU-7.

As of May 23, 2014, the average interior piezometer leachate elevation in SWMU 7 was 571.49. This is only 0.69 feet or approximately 8 inches above the Target Leachate Level (TLL) of 570.8. The leachate level had been down to 570.81 as of November 8, 2013, but leachate production since that date has been greatly reduced. An average of 763 gallons per day of leachate was removed from SWMU 7 in November 2012 through May 2013. For November 2013 through May 2014 the average was 453 gallons per day, a 40 percent reduction. The following factors previously detailed in monthly progress reports contributed to the reduced production:

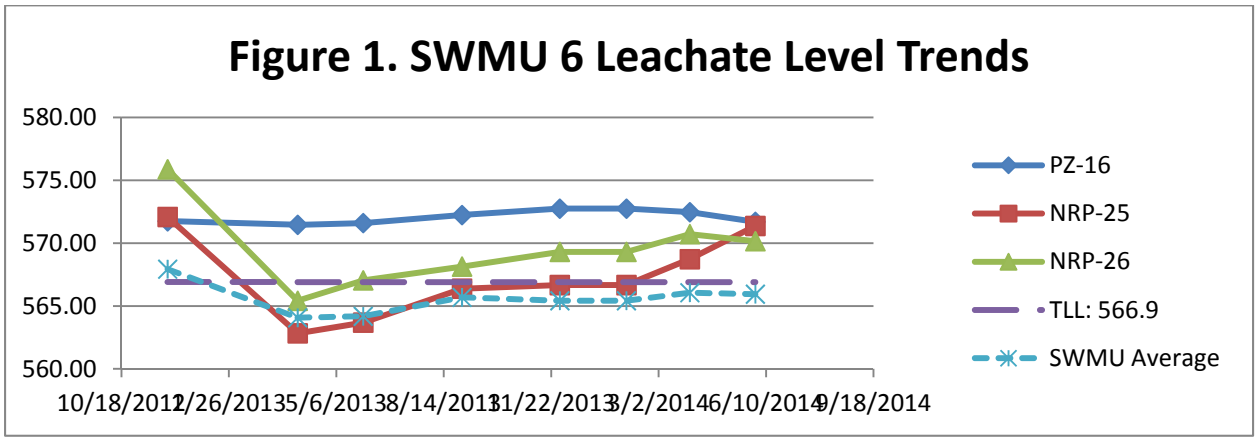
1. Frozen discharge lines at various wells due to unusually severe winter weather.
2. Heavy oil blinding various pump inlet screens.
3. Shifted wells at RW-9, RW-12, and DPW-20, likely due to settlement of dewatered waste, preventing removal of the pump for maintenance.

All SWMU 7 pumping wells are back in service and functioning well except for the three shifted wells. Due to the lost production over the past winter and spring MSG does not anticipate that ESOI will be able to demonstrate achievement of the TLL by the July 1, 2014, target date in the current permit. With the SWMU 7 storm water improvements now fully in place MSG fully expects that ESOI will be able to achieve the TLL by July 1, 2015. Ongoing work on the SWMU 6 stormwater improvements will include lining the swale between SWMU 6 and 7 which should further reduce recharge to the areas served by NRP-29 and possibly NRP-30.

The Mannik & Smith Group anticipates that the leachate extraction system will perform acceptably without the three shifted wells. RW-12 has been a low-producing well since the center of the landfill has been highly dewatered as evidenced by the level in nearby piezometer PZ-11 being 6 feet below the TLL. It is anticipated that wells RW-2 and DPW-18 on opposite sides of RW-12 will serve to maintain a dewatered condition in this area and along with PZ-11 are located to provide continued leachate level monitoring in the vicinity of RW-12. Well DPW-19 is in the vicinity of both RW-9 and DPW-20 and is expected to maintain a dewatered condition and leachate monitoring in that portion of the landfill. ESOI should continue to assess the viability and cost effectiveness of new types of pumps and replacement well locations. If agreeable with Ohio EPA, MSG recommends that ESOI request that the permit be modified to grant a one year extension for achievement of the SWMU 7 TLL to July 1, 2015.

2.0 PLAN FOR ACHIEVEMENT OF THE TLL AT SWMU 6 INDIVIDUAL DEEP INTERIOR PIEZOMETERS

The average deep interior piezometer leachate level in SWMU 6 has been maintained below the TLL since March 2013 in spite of the operating challenges posed by the severe winter of 2013-2014 and heavy oil accumulations in some pumping wells. However the following three deep interior piezometers continue to have leachate levels above the TLL: DPW-16, NRP-25, and NRP-26. Figure 1 below graphs the leachate levels in these wells from November 2012 through May 2014.



DPW-16 is believed to be extracting leachate from the same waste disposal trench that is serviced by RW-8 and NRP-29. All three of these wells are very productive wells, typically extracting 100 to 300 gallons per day each but the area they serve is recharged by stormwater from the drainage swale between SWMUs 6 and 7 which often has standing water. NRP-25 and NRP-26 are believed to be extracting leachate from the northernmost waste disposal trench in SWMU 6. MSG believes that this area is recharged from the north toe-of-slope swale and from the ditch and marshy area on the Gradel Landfill property adjacent to the north ESOI property line. NRP-26 has been a very productive well since March of 2013, typically yielding in excess of 500 gallons per day of very clear water. NRP-25 has been a low-productivity well apparently due to heavy oil in the vicinity of the well. MSG recommends the following plan of action to reduce recharge in the areas serviced by these wells and to achieve downward trends in leachate level to meet the TLL:

- Complete of the SWMU 6 stormwater improvements including lining of the north and south swales. MSG believes that the existing wells will be found to be adequate once the swales are lined to reduce recharge.
- Pull the DPW-16 pump and examine the pump and the well to determine whether the pump and level sensor are installed at the proper depth for maximum productivity. Comparison of well construction data with recent level measurements suggest that with adjustments the pump may be able to maintain well levels several feet deeper than is currently observed during pumping.
- Pull the NRP-25 pump and clean the well, pump, and level sensor to remove accumulated oil with the goal of improving pump productivity. This may have to be done on a periodic basis. Continue to treat the well with a detergent additive (Simple Green®) to attempt to make the oil more miscible in the water.
- Examine well NRP-26 for silt accumulations and, if necessary, remove the silt by the Waterra® method.
- Perform monthly monitoring of these wells until they individually achieve the TLL.

3.0 DELISTING OF RW-5, RW-6, AND RW-7

MSG has determined that leachate recovery wells RW-5, RW-6, and RW-7 in SWMU 6 were installed in locations where they do not serve as effective leachate recovery wells or interior piezometers for determining average leachate levels above the bottom of the SWMU. Therefore if agreeable with Ohio EPA, MSG recommends that ESOI submit a modification request to remove these three wells from Tables 1 and 2 of the OMPM Plan. Upon approval, ESOI should discontinue operation of and remove pumping equipment and discontinue mandatory level measurements in these wells.

and reduce head levels by removing leachate to the lowest level which is practicably achievable at a frequency that will promote removal without compromising equipment functionality. These performance objectives will be implemented by the following:

(a) The permittee will decrease the volume of the contaminant sources by reducing head levels within the WMUs. The permittee will demonstrate that this objective is achieved at each WMU by documenting that the head levels at established interior piezometers, as identified in Table 1.0 of the OMPM Plan, have a decreasing trend. This objective must be achieved no later than July 1, 2009 and sustained until Permit Condition E.9(b)(i)(b) is established.

(b) The permittee will demonstrate that an inward hydraulic gradient is established by documenting that the average leachate level head potential at a WMU's interior piezometers, as identified in Table 1.0 of the OMPM Plan, is at least 1-foot lower than the average liquid potential in established perimeter shallow till wells, as identified in Table 1.0 of the OMPM Plan. This objective must be achieved not later than July 1, 2010 and sustained until Permit Condition E.9(b)(i)(c) is established.

(c) WMU 6: No later than July 1, 2013, the permittee will ensure that the average of the leachate head level measurements from the deep interior piezometers, as identified in Table 1.0 of the OMPM Plan, is maintained below a Target Leachate Level of 566.9 ft. MSL and that the WMU is effectively dewatered in the vicinities of the shallow interior piezometers as identified in Table 1.0 of the OMPM Plan.

WMU 7: No later than July 1, ~~2014~~2015, the permittee will ensure that the average of the leachate head level measurements from the deep interior piezometers, as identified in Table 1.0 of the OMPM Plan, is maintained below a Target Leachate Level of 570.8 ft. MSL and that the WMU is effectively dewatered in the vicinities of the shallow interior piezometers as identified in Table 1.0 of the OMPM Plan.

WMU 5 Central Area: No later than July 1, 2016, the permittee will ensure that the average of the leachate head level measurements from the deep interior piezometers, as

and reduce head levels by removing leachate to the lowest level which is practicably achievable at a frequency that will promote removal without compromising equipment functionality. These performance objectives will be implemented by the following:

(a) The permittee will decrease the volume of the contaminant sources by reducing head levels within the WMUs. The permittee will demonstrate that this objective is achieved at each WMU by documenting that the head levels at established interior piezometers, as identified in Table 1.0 of the OMPM Plan, have a decreasing trend. This objective must be achieved no later than July 1, 2009 and sustained until Permit Condition E.9(b)(i)(b) is established.

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WMU 7: No later than July 1, 2015, the permittee will ensure that the average of the leachate head level measurements from the deep interior piezometers, as identified in Table 1.0 of the OMPM Plan, is maintained below a Target Leachate Level of 570.8 ft. MSL and that the WMU is effectively dewatered in the vicinities of the shallow interior piezometers as identified in Table 1.0 of the OMPM Plan.

WMU 5 Central Area: No later than July 1, 2016, the permittee will ensure that the average of the leachate head level measurements from the deep interior piezometers, as